

Appl. No.
Amdt. dated July 13, 2006
Preliminary Amendment

Amendments to the Claims

This listing of the claims will replace all prior versions, and listings, of the claims in the application.

Listing of Claims

1. (currently amended) Dispersion A dispersion which contains particles of at least one intrinsically conductive polymer, wherein the particle size is on average (weight) less than 1 μm , characterized in that the dispersant is a liquid at room temperature, and a layer, film or sheet formed from this dispersion has a conductivity of >100 S/cm after removal of the dispersant.
2. (currently amended) Dispersion The dispersion according to claim 1, characterized in that the conductivity is at least 200 S/cm.
3. (currently amended) Dispersion The dispersion according to claim 2, characterized in that the conductivity is 300 S/cm to 3000 S/cm.
4. (currently amended) Dispersion The dispersion according to ~~one of the previous claims~~ ~~claim 1 to 3~~, characterized in that the polymer is selected from the group consisting of polyaniline, polythiophene, polythienothiophene, polypyrrole, copolymers of the monomers of these polymers and polymers or copolymers of the derivatives of these monomers.
5. (currently amended) Dispersion The dispersion according to ~~one of the previous claims~~ ~~claim 1 to 4~~, characterized in that the dispersant has a relative viscosity of < 10,000.

6. (currently amended) ~~Process A process~~ for the preparation of a dispersion according to one of claims ~~claim 1 to 5, in which in this sequence comprising the steps of:~~
 - (a) ~~preparing~~ an intrinsically conductive polymer ~~is prepared~~ from monomers, wherein the temperature during the polymerization is controlled such that it does not exceed a value of more than 5°C over the starting temperature,
 - (b) ~~triturating and/or dispersing~~ the product from stage ~~step~~ (a) ~~is triturated and/or dispersed~~ in the presence of a non-electrically conductive, non-polymeric polar substance which is inert vis-à-vis the conductive polymer, applying adequate shearing forces, wherein the weight ratio between the conductive polymer and the polar substance is 2:1 to 1:10, and
 - (c) ~~dispersing~~ the product from stage ~~step~~ (b) ~~is dispersed~~ in a dispersant, wherein the weight ratio between the conductive polymer and the dispersant is less than 1:10.
7. (currently amended) ~~Process The process~~ according to claim 6, characterized in that at no time during the polymerization is the rate of the temperature rise during stage ~~step~~ (a) more than 1 K/minute.
8. (currently amended) ~~Process The process~~ according to claim 7, characterized in that in stage ~~step~~ (b) furthermore at least one non-conductive polymer is present.
9. (currently amended) ~~Process The process~~ according to claim 8, characterized in that the non-conductive polymer is a thermoplastic polymer.

10. (currently amended) ~~Process~~ The process according to ~~one of claims~~ claim 6 to 9, characterized in that the product from ~~stage~~ step (b) is subjected to a post-treatment.
11. (currently amended) ~~Process~~ The process according to claim 10, characterized in that the portion of the polar substance or of the non-conductive polymer in the product from ~~stage~~ step (b) is reduced during the post-treatment by washing or extraction.
12. (currently amended) ~~Process~~ The process according to ~~one of claims~~ claim 6 to 11, characterized in that solvents and/or auxiliaries are added which support the subsequent dispersion ~~stage~~ step (c).
13. (currently amended) ~~Process~~ The process according to ~~one of claims~~ claim 6 to 12, characterized in that the product from ~~stage~~ step (c) is subjected to a post-treatment.
14. (currently amended) ~~Process~~ The process according to ~~one of claims~~ claim 6 to 13, characterized in that viscosity regulators, wetting aids, matrix polymers, stabilizers, cross-linking auxiliaries, evaporation regulators and/or other auxiliaries and additives which support an optionally following shaping process are added.
15. (currently amended) ~~Process~~ The process according to claim 14, characterized in that the addition takes place before or during ~~stage~~ step (c).
16. (currently amended) ~~Process~~ The process according to ~~one of claims~~ claim 6 to 15, characterized in that during the post-treatment of the product of ~~stage~~ step (b) and/or during dispersion ~~stage~~ step (c) an organic solvent is used which has a surface tension of more than 25 mN/m.

17. (currently amended) ~~Process~~ The process according to ~~one of claims~~ claim 10 to 16, characterized in that the concentration of the conductive polymer increases during the post-treatment of the product from ~~stage~~ step (b) by at least 5 wt.-%, relative to the constituents solid at room temperature.
18. (currently amended) ~~Process~~ The process according to ~~one of claims~~ claim 6 to 17, characterized in that the dispersion ~~stage~~ step(s) is or are carried out in a dispersion device selected from the grouping consisting of a ball mill, a bead mill, a three-roll mill and a high-pressure dispersion device.
19. (currently amended) ~~Process~~ The process according to ~~one of claims~~ claim 6 to 17, characterized in that the dispersion is carried out under ultrasound.
20. (currently amended) ~~Use~~ The use of a dispersion according to ~~one of claims~~ claim 1 to 5 ~~or prepared according to the process according to one of claims 6 to 19~~ for the preparation of mouldings, self-supporting films or coatings with electric conductivity.
21. (currently amended) ~~Use~~ The use according to claim 20, characterized in that the mouldings, self-supporting films or coatings are electrodes, antennae, polymeric electronics components, capacitors and double-layer capacitors (DLC).
22. (new) The use of a dispersion prepared according to the process of claim 6 for the preparation of mouldings, self-supporting films or coatings with electric conductivity.
23. (new) The use according to claim 22 characterized in that the mouldings, self-supporting films or coatings are electrodes, antennae, polymeric electronics components, capacitors and double-layer capacitors (DLC).